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ART. II.—BRIEF OUTLINES OF NEUROLOGY.—(CONTINUED.)

Part II....Physiology.

(How to determine the Physiological Constitution, Temperament, and Tendencies to Disease.)

AN intimate sympathy exists between the whole body and the whole brain, and between special portions of the body and special portions of the brain. The brain also originates a nervous influence controlling the body, and special portions are appropriated to particular organs. The development of the brain, therefore, indicates the vital forces that govern the body, and the developments of the brain and body generally coincide.

A large development of the basis of the brain indicates vigor of all the vital functions: the muscular system is well developed; the blood is abundantly formed; respiration and digestion, calorification and the various secretions are vigorously maintained; animal life and the animal passions are powerful, and, unless regulated by proper development of the upper regions of the brain, become predominant. But when the basis of the brain, between and behind the ears, is of feeble development, the occiput is shallow and narrow (indicated generally by a slender neck), the constitution has less vital force; the passions are less vigorous; the body is slender; the muscular system feeble; the blood slowly formed, and often impoverished. The whole constitution languishes from an imperfect vitality, and is inclined to diseases of debility and depression. Vitality is easily exhausted by disease, violence, or wounds; and the individual often dies without any apparent or sufficient cause.

Hardships, irregularities, injuries, wounds, which would be easily borne by a man of strong basilar development, prove fatal to those in whom it is deficient. Even the moral and intellectual organs, partaking of the general constitutional debility, and imperfectly

supplied with arterial blood, are less vigorous in their manifestations.

In the one case we observe plethora, hypertrophy, active inflammation, high fevers, rheumatism, and diseases of a violent character, which, nevertheless, are borne by the constitution with great powers of resistance. In the other case we observe a pale, feeble, anæmic condition, with a tendency to consumption, scrofula, typhoid or adynamic fever, and diseases generally of a low grade. Dyspepsia, chlorosis, neuralgia, passive congestions and hemorrhages abound in the feeble class.

The conditions just mentioned (with and without strong basilar development), may be designated **STHENIC** and **ASTHENIC**.

There is another important distinction of constitution to be made between the **TONIC** and **ATONIC**.

Whenever the superior-posterior region of the brain is large (the region of Firmness and Health), there is a great amount of vital stamina, without the strong, copious vitality which belongs to the basilar region. Such constitutions have fine powers of resisting disease or exposure, and preserving the regular play of the functions. They may be feeble, if the basilar region is deficient, but still they are not easily deranged. When the Sthenic or Basilar and the Tonic or Superior-Occipital Regions are both largely developed, we have the highest degree of constitutional vigor,—capable, not only of the most extraordinary exertion, but of the most prolonged endurance under privation, exposure, or fatigue.

The perfection of the physiological powers, therefore, is found in those who have a large development of these two regions,—the one giving animal vigor and the other healthy tone.

The anterior-inferior region of the middle lobe, indicated on the temples and face, is the Atonic Region, the tendencies of which, when predominant, are to debility and disease. This morbid, debilitating region, indicated by breadth in front of the ear, may exist in conjunction with the occipito-basilar region, in which case there will be great vital force and muscular development, and great power of exertion, but at the same time a tendency to languor and disease. If it is well developed in conjunction with its antagonist, the tonic region, there will be considerable powers of exertion and endurance, but not of very long-continued and uninterrupted exertion. There will be a great necessity for occasional relaxation, and a great liability to disease when the morbid causes attain sufficient intensity. The most healthy and enduring constitution will be found when the superior-occipital region is large, and when the narrowness of the face and temples indicates that the morbid debilitating tendencies have but little influence.

The Intellectual Organs give greater delicacy and sensibility to the constitution, and tend to diminish or restrain the animal vigor. The Moral Organs exert an influence which is soothing and extremely pleasant, but also debilitating when in excess. Their

proper influence, however, is beneficial in promoting the general activity of the brain, sustaining the spirits and diminishing violent irritations and excitements.

Having observed the comparative development of these great regions of the head, and their effects upon the constitution, we may proceed to the consideration of special organs.

The organs of the middle lobe, extending from the temporal arch down along the lower jaw and in front of the ear, exert a generally debilitating influence upon both mind and body. Mentally, they produce a feeble, languid, irresolute character. Physiologically, their influence is equally debilitating. Their sympathetic influence on the body is exerted upon the internal viscera, which they excite and develop.

The location nearest to the temporal arch corresponds to the brain; that next below, to the lungs: the heart, liver, and stomach, the alimentary canal and kidneys have their locations in regular succession on the brain as in the body. These regions,—to wit: the cephalic, the pulmonic, the cardiac, hepatic, gastric, abdominal, and renal,—generally indicate correctly the condition of the viscera to which they correspond.

A large **CEPHALIC** region indicates the predominance of the brain, producing a calm, thoughtful temperament.

A large **PULMONIC** region indicates a predominance of the lungs; and the greater vital exertion and excitement of the lungs, in that case, produces a temperament gentle and pleasant, but more excitable than the cephalic.

A large development of the **CARDIAC** region indicates excitability of the heart. The pulse is more frequent, the whole constitution more excitable. The excitement is apt to run to excess, and to produce a debilitating effect. The cephalic temperament is more calm and intellectual. The pulmonic has a greater degree of vivacity and activity of the emotions. The cardiac has an intense excitability, which involves the animal passions as much as the emotions.

The **HEPATIC** region, indicated in front of the ear just above the zygomatic process, denotes, when largely developed, a corresponding development of the liver, producing generally a copious biliary secretion. We often see this region deficient—(indicated by depression just above the origin of the zygomatic arch, a little above and in front of the cavity of the ear)—and in consequence a torpid and inactive state of the liver, and a deficient secretion of bile. Such individuals frequently require cholagogue purgatives; and unless they lead an active life, are quite liable to biliary disorders. From the deficient biliary secretion, they are more liable to constipation, from which those of large hepatic development are comparatively free.

The **GASTRIC** region, located just in front of the cavity of the ear, has been called **ALIMENTIVENESS**, because it is the source of

the propensity for taking food. When large, there is a vigorous appetite, and usually there are fine digestive powers. When small, the appetite is feeble; the action of the stomach is languid; and dyspepsia or indigestion is apt to occur. If the individual has been prudent, he may suffer from a languid and imperfect digestion rather than from any positive disorder of the stomach. Those in whom the gastric region is defective, are much less capable of indulging in free living; and their health is more speedily destroyed by any excess at table.

When the posterior portion of the organ is large, which originates the love of stimulus, or the drunkard's thirst, there will be a fondness for stimulating condiments and liquids. Such individuals are very fond of mustard and pepper, piquant sauces, wines and alcoholic drinks, tobacco, cigars, snuff, &c. They can endure with impunity an amount of indulgence in this way which would be fatal to the former class. We often see young men in whom the capacity for stimulus is small, prematurely broken down by indulging in the social glass, through the influence of companionship, in which their own appetites would probably not have led them to indulge.

ABDOMINAL REGION.—In observing the prominences or depressions along the lower jaw, half way to the chin, we ascertain the condition of the other portions of the alimentary tract. For example, a depression just below the gastric region would indicate a deficiency of the duodenum or small intestines. A deficiency in a lower part of the jaw would indicate a corresponding deficiency in the lower bowels. A development of the whole range below the gastric region, would indicate a general activity of the abdominal functions, and a tendency to profuse rather than scanty evacuations. Constipation and intestinal disorders result frequently from the deficiency of the abdominal region. Diarrhoea and exhausting evacuations are more prevalent when it is large.

RENAL REGION.—The development of the kidneys is indicated in front of the lower part of the ear. A large development in this location indicates profuse or frequent evacuations of urine; and a deficient development indicates inactivity of the kidneys.

CUTANEOUS FUNCTIONS.—Between the termination of the abdominal region and the chin, we find the indication of the cutaneous functions. A broad and prominent development at this point is generally accompanied by an active perspiratory condition of the skin. A deficiency, indicated by narrowness, denotes a dry and inactive state of the skin, which is more liable to irritation and cutaneous disorders. The fluids taken into the system, pass off by the cutaneous and renal evacuations. The developments just mentioned will enable us to determine by which channel they chiefly flow.

CALORIFICATION OR ARDOR.—The production of heat in the human constitution takes place by means of the combination of oxygen with the carbon of the blood in the course of the circula-

tion, and is governed by nervous influences. By severing the ganglionic nerves and successive portions of the spinal column, we may trace these influences to the brain. The development of the brain, therefore, will furnish the proper criterion of the calorific power of the constitution.

The calorific power is indicated externally, by the prominence of the chin, especially of its central portion, together with a general development of the occipital basis, and of the organs along the median line of the head. A large development of this region indicates great power of enduring cold, and an adaptation to a cold, rather than a warm climate.

The **REFRIGERATING** or **COOLING** influences, antagonistic to calorigenesis, are found on the head just behind cautiousness, on a line vertically above the posterior margin of the ear. If that region be large, the neck small, and the chin deficient in prominence, there will be an incapacity for enduring cold, and a fine capacity for resisting the influences of heat. This condition may be denominated the **COLD TEMPERAMENT**, the former the **ARDENT**. The cold temperament is more liable to chills and congestions, the ardent to fevers and inflammations.

Of the **LUNGS AND RESPIRATORY FUNCTIONS**.—I have ascertained not only by experiment upon the organs, but by observation upon the developments, and their effects on many individuals, that we may determine correctly the organic action of the lungs, by the development of the respiratory organs indicated on the face. I find a respiratory region extending round the nose and mouth, down to the middle of the chin, in which region we may distinguish expiratory and inspiratory influences.

The expiratory influences are located immediately round the nose and mouth, the inspiratory immediately exterior, in a semicircular manner. All movements of an expiratory character originate from the expiratory region, all of an inspiratory nature from the inspiratory region. If both regions are large, the process of respiration is carried on with great vigor. If both are small, the lungs are comparatively inactive. If inspiration predominates, the lungs are kept habitually inflated; if expiration, they are kept habitually collapsed. In the former case, although the lungs are well expanded, the voice is not so well adapted to any vocal effort, from the want of expiratory force; and in the latter case, although the lungs are not much expanded, they are well adapted to vocal effort, from the expiratory power which they possess.

The different portions of the inspiratory and expiratory regions correspond to the different portions of the breathing apparatus,—the lower portions, below the angle of the mouth, corresponding to the lower portions of the lungs, and the upper portions corresponding successively to the higher portions. A development of the inspiratory region below the mouth, indicated by general prominence of the lower jaw above the chin, indicates expansion of the lower

portion of the lungs with deep respiration. From that point circularly up to the alæ of the nose, we find successive indices to different portions of the lungs. If Inspiration be largely developed above the mouth and deficient below it, the upper portions of the lungs will have unusual expansion, while the lower portion will be less active. The voice and respiration, therefore, will be deficient in depth. Such individuals habitually make but little use of the diaphragm, and breathe more by the intercostal muscles. They need suitable exercises for the purpose of developing the lower portions of the lungs.

If the expiratory region be large below the mouth, there will be great power in the way of forcible delivery, as in shouting or in coughing. Such persons are more liable to violent coughs. The development about the angle of the mouth corresponds to the ordinary force of expiration in laughter, or an elevated tone of voice. The development a little above the mouth corresponds to the force of ordinary colloquial delivery. That near the alæ of the nose to the feeblest mode of delivery, as in whispering.

LOQUACITY is commonly, but very erroneously, referred to the organ of language. The highest degree of lingual power is compatible with complete taciturnity. Loquacity is more frequently found where the lingual or literary talent is deficient. It may be regarded as an animal propensity, connected with the expiratory region, which is generally prominent at or above the mouth in all great talkers, their mode of delivery being more or less boisterous, as the development descends below the mouth or rises to the nose. Those in whom the expiratory development is depressed near the nose and prominent around the mouth, are disqualified for whispering or speaking in a gentle manner; and express themselves with much more ease when they use the voice with force.

ANTAGONISM OF THE FOREGOING ORGANS.—The range of organs extending from Firmness to Restraint and Coldness, exercises functions antagonistic to those of the organs extending from the Cardiac region to the region of Ardor or Calorification.

In the region of Firmness we find a steady and agreeable mental condition, opposite to the excitability of the cardiac region and the melancholy tendencies of the hepatic. We observe also the organ of Temperance or Abstinence (the antagonist of the gastric functions), which gives us the power of restraining digestion and enduring abstinence. From this point to the region of Restraint and Coldness, we find successively the antagonisms of the physiological organs, extending along the jaw to Ardor and Respiration. A development of this superior region tends to give quietness to the abdominal viscera, and diminish the excitement of all their functions. When the region of Restraint predominates over that of Respiration, the respiratory movements are more quiet, and there is less necessity for respiration, and less impulse to speak. The development of the cephalic region is antagonized by the lower por-

tion of the neck; that of the pulmonic region by the lower portion of the occiput and upper portion of the neck. Consequently, where the occiput is short or shallow, and the neck slender, there will be a greater tendency to pulmonary congestion, and to predominance of the brain and nervous system.

NUTRITION, ATROPHY, &c.—Prominence of the back part of the neck indicates a tendency to grossness of person, being the external indication of the organ of Nutrition. Its antagonist, the tendency of which is to absorption, and in excess to atrophy, is found on the cautious region. Where the organ of Nutrition is large, the individual either attains great stoutness or becomes corpulent. Where it is defective, indicated by the flatness or slenderness of the neck, the meagerness of the person's appearance indicates the deficiency of his powers of nutrition.

The organ of Atrophy, the antagonist of Nutrition, lies in the region which tends to sedentary pursuits, and anxious mental exertion,—causes which tend most powerfully to reduce our physical growth.

If Atrophy and Nutrition are properly balanced, there will be a stout, yet well regulated development of the body. If Nutrition greatly preponderates, there will be a superabundance of flesh of an inferior character, with a tendency to hypertrophy and morbid growths. If Atrophy preponderates, there will be an extreme meagerness,—a tendency to the condition of the celebrated "living skeleton," Calvin Edson. I have confirmed these principles by observation, not only upon the corpulent and lean, but upon men of gigantic stature as well as corpulence, and upon dwarfs. In the latter there is always deficiency of basilar development in the region of nutrition. Without making an exact location of the organs, we may generally judge of the tendency to corpulence or leanness, by comparing the breadth across the parietal bones, and the fullness and depth of development on the neck, the latter always indicating a stout person.

The heads of C. Stratton (Tom Thumb), the Scotch and Belgian giants, Fat Boys, and others who have been publicly exhibited, are excellent illustrations of these principles.

HEALTH AND DISEASE.—To determine the healthy or morbid character of any constitution, we should look to the development of the organ of Health posterior to Integrity and Firmness, and compare that with the organ of Disease, located upon the cheek bones, and indicated by their breadth or prominence. If this portion of the face be remarkably narrow in proportion to the development of Health, we may be assured that there are no strong morbid tendencies. Such individuals have great powers of resisting disease, even when their vital force is quite moderate. With ordinary prudence they would entirely avoid every derangement of health, and die of old age alone; but such persons, conscious of the strength of their constitution, are often proportionally reckless, and produce chronic diseases, by a long course of violation of the laws of health. When

the region of disease predominates over that of Health, very slight causes are capable of deranging the health, which can only be preserved by the most unremitting care. Diseases, when contracted by such persons, manifest great violence, and unless there be a good development of Vitality, are apt to prove fatal, or at least to resist restorative measures.

A most unfortunate conformation exists, when a large development of disease co-exists with a small development of its next organ, Sensibility. In this case, for want of sensibility, the individual habitually exposes himself to injurious influences, of which he is not aware, and readily contracts diseases without a suspicion of their causes.

When we ascertain the existence of the morbid tendency, other developments will determine the direction which it is most likely to take. For example, if the organ of calorification be large, the febrile and inflammatory tendency will be strong. If the hepatic region be defective, there will be torpor or derangement of the liver. If the gastric be deficient, there will probably be dyspepsia. If the abdominal region, there will probably be constipation and other abdominal disorders. If the renal region be small, the kidneys will be inactive; if large, more excitable and liable to congestive or inflammatory disease. If the cutaneous region be large, the person will be liable to profuse perspiration; if deficient, to a dry and irritable condition of the skin. If the cystic region be large, the expulsion of urine will take place with greater promptness, and the bladder will be more irritable; if small, the bladder will be less active.

And, in general, we may remark that a very large or very small development of any of the physiological organs in the brain indicates that the corresponding organ of the body deviates from its healthy constitution, and will be more liable to morbid phenomena. If the development be large, the determination to the part in question will be greater, and the morbid phenomena more active; but if the development be small, the determination to the organ will be less, and the morbid phenomena of a languid or passive character.

VITALITY.—The amount of vital force is indicated by the depth and fullness just behind the mastoid process. In a vigorous constitution this region is full, and the neck presents a rounded appearance. In a constitution of feeble vitality, the neck presents a marked depression just behind the mastoid process; and the finger at this point may be forced farther underneath the basis of the skull. A predominant development of health and vitality would indicate a vigorous, enduring constitution, and hence would give a strong prospect of longevity.

The antagonist of Vitality is found in the region of **MORTALITY**, on the upper surface of the cranium, which subdues the animal powers, and gives a tendency to trance, syncope, and death. When the vital powers are feeble, any high excitement of the moral region

is extremely prostrating and dangerous. Scenes of religious or pathetic excitement that would be highly beneficial to persons of a strong animal nature, might prove utterly prostrating to those in whom the animal organs are too small. Hence the necessity of caution in playing upon the emotions as well as the passions. A premature developement of the moral sentiments and intellectual faculties in children is highly objectionable, as it tends to arrest the development of the animal organs, which are more essential to life.

LOCOMOTION AND ITS ANTAGONISTS.—The great depth of the occiput and development of Vitality indicate a disposition to active muscular exertion. The breadth along the sterno-cleido-mastoid muscle (which runs from the mastoid process to the sternum or breast bone), indicates more especially the restless locomotive impulse. Antagonism to this is found in the region of Tranquillity, at the upper edge of Cautiousness. The love of home, and the disposition to settle in a particular place, which were called by phrenologists Inhabitiveness, belong, in reality, to the regions of Tranquillity and Patriotism. Breadth of the neck, which produces violent, restless locomotive impulses, is unfavorable to fixed residence, or to any sedentary pursuits. A large development of the tranquil region gives a fondness for a sedentary life, and a disposition to become attached to places. When, on the contrary, the head is very narrow across the region of tranquillity and restraint, we generally find the individual restless, impulsive, easily roused, and almost incapable of confining either his mind or his body to quiet sedentary pursuits.

IRRITABILITY.—Irritation is the principal cause of restlessness, and a great source of inflammation and other forms of disease. When the constitution is irritable, our organs suffer from a great variety of causes, and the irritation, if prolonged, is liable to result in morbid effects. Irritability depends upon the organ located immediately above the cavity of the ear. We sometimes find the organ of Irritability large, when disease is but moderately developed. In this case there may be many transient or chronic irritations of the various organs, which do not produce any structural disease. When Irritability is small, the constitution has much greater power of enduring injurious impressions: it is less injured by poisonous substances, tolerates medicine better, and has less violent suffering during the attacks of disease.

SLEEP.—The tendency to sleep may be judged of by the breadth of the head, about an inch behind the organ of Cautiousness. This being the region of sleep, it is balanced by the region of Consciousness or wakefulness, in the forehead. A prominence of the forehead, with a narrowness of the head behind Cautiousness and Coldness, would indicate great wakefulness and a feeble capacity for sleep. In this case the individual generally sleeps but six hours or less, and easily endures the loss of sleep. But when the region of sleep is larger than that of Consciousness or wakefulness, eight or ten hours of rest are demanded, and he is incapable of bearing a

loss of sleep without great exhaustion. The tendency to wakefulness is greatly assisted by other organs, such as Energy and Vitality. Those in whom Vitality is large, are apt to be early risers. The cephalic development also contributes to increase the intellectual excitement and wakefulness. On the other hand the regions of Indolence and Relaxation and lower portions of the neck, contribute to increase the disposition to sleep.

SOMNOLENCE.—The organ of Somnolence also contributes to encourage the sleepy propensity; and is of itself a source of apparent sleep. Those in whom Somnolence is large (indicated by fullness of the temples), are very apt to pass into a quiet and dreamy condition, without becoming absolutely fast asleep. If Somnolence is deficient, the individual will be either wide awake, or sound asleep, with his mind in perfect repose, having no capacity for the intermediate *sleep-waking*. If Somnolence is large, the sleep will generally be disturbed by dreams, pleasant or unpleasant, and varied according to the character of the predominant organs which happen to be under excitement.

AMATIVENESS, OR THE SEXUAL IMPULSE.—This propensity is located in the central portion of the cerebellum, and externally indicated just beneath the occipital protuberance on the median line. When this organ is well developed, there is a round fullness on the back of the neck; when deficient, there is a depression. To ascertain its predominance, it must be compared with the region of Chastity, in the neighborhood of Cautiousness. If the head be narrow in this region, which restrains the sexual passion, the latter, of course, will predominate proportionally. If these two antagonistic regions be well developed, there will then be an equal endowment of the sexual passion, and of the controlling power.

If the organ of Amativeness be deficient, with a large development of Chastity, impotence will probably result; but if the regions of Chastity and Restraint be remarkably small, the sexual passion will run to excess. In either case the sexual organs will be more liable to disorder especially in the female.

CIRCULATION OF THE BLOOD.

The mechanical causes of the circulation of the blood have been fully explained by physiologists. It is now known that the heart is the principal agent in the propulsion of the blood, and that its progress and distribution throughout the body are assisted and regulated by the blood-vessels—especially by their smallest ramifications, the capillaries. (So named from being as fine as a hair.) The blood-vessels, by contracting under the influence of cold, irritation, spasm, &c., shut off the due supply of blood, or by expanding under the influence of warmth and other stimulants, admit a greater influx.

At the same time it is probable that by a progressive or peristaltic movement they accelerate and propel their contents. Thus we understand how the heart and blood-vessels mechanically circulate and distribute the blood.

But as the heart and blood-vessels are not considered the originators and regulators of their own action, we are required to seek in the nervous system the powers which govern this circulation and distribution of blood.

Physiologists have accordingly discovered that the ganglionic system of nerves controls the action of the heart and blood-vessels. These ganglionic nerves consist of innumerable filaments distributed throughout the body, and accompanying, as is believed, the minutest ramifications of the blood-vessels. These nervous filaments are derived from small masses of nervous matter, situated principally in the trunk near the spinal column, from the interior of the cranium to the lowest vertebræ. These ganglionic nerves have no consciousness, volition, or mental power, and are regarded by all as merely presiding over the involuntary physical functions of the living body.

But as the action of the heart and blood-vessels is evidently affected by the brain, and responds to our various emotions, it becomes necessary to explain how this control is exercised. Moreover, if we would understand the philosophy of health and disease, it is indispensable that we should discover not merely the organs that propel the blood, but those which govern its distribution. Every departure from health is believed to be accompanied by a loss of the equilibrium of the circulation, while health is characterized by the regular and equable distribution of the blood to all parts. It is therefore indispensable to a philosophical system of medicine to understand how the equilibrium of the circulation is maintained or destroyed, and what are the powers that preside over the distribution of the blood. The mere mechanical fact of *circulation* as demonstrated by Harvey, is of little importance, in comparison with the laws of *distribution*, from which arise the phenomena of pathology and physiology.

The control of the brain over the circulation is exercised principally through the spinal cord. The filaments of the spinal and ganglionic nerves have so extensive and intimate a connection, that the whole ganglionic system is thus readily controlled by the brain. The heart, for example, does not obtain its nerves directly from the brain, but is controlled by ganglionic filaments derived from ganglia in the neck. Yet as these connect with the spinal cord, they convey to the heart instantly the influence of any of our emotions, changing its action, condition, and health, according to the character of the excitement transmitted. By means of these connections, with the assistance of the pneumogastric nerve (which connects the medulla oblongata with the lungs, stomach, heart, liver, &c.), the brain is not only enabled to control the heart, but is enabled to perceive its various conditions. This control, it is true, is not volun-

tary in the human race generally, but if attention were directed to the action of the heart in a systematic manner, it is probable that many might obtain the same control over its action which was exercised by Col. Townsend, of the British army.

The influence of the brain upon the circulation is determined by the pathognomonic lines of the organs—as will be explained hereafter. The organs along the side of the head generally exert a centripetal influence, tending to accumulate the circulation in the internal viscera. The organs along the median line, on the contrary, exert a centrifugal influence, and tend to prevent internal congestion. The superior organs of the brain give the blood a tendency upward, and the basilar organs throw it downward—to the lower parts of the body and the lower limbs. Hence, hard study, and the exercise of the gentle, tranquil emotions, tend to diminish the circulation of the lower limbs—producing frequently coldness of the feet, while the angry, violent passions belonging to the basis of the brain, throw the circulation forcibly into the limbs, giving them strength and warmth. The special determinations of blood produced by each region of the brain, constitute a subject of minute investigation for the physician. The influence of the brain upon the heart and blood-vessels, corresponds with its general influence upon the muscular system. The organs of the anterior half of the head produce a soft, relaxed condition of the muscular system in general, and give a corresponding softness to the pulse. The organs of the posterior half of the head give a firm, tense, resisting character to the pulse. The superior occipital region, the location of the organ of Health, &c., produces a pulse of proper firmness, characterized by great steadiness and regularity. The anterior-inferior region of the middle lobe, on the contrary (region of Disease, &c.), produces a pulse of extreme debility and irregularity, such as belongs to prostrating fevers. The inferior occipital region produces the contracted, tense or wiry pulse, which is recognized by the physician as symptomatic of intense irritation, but which does not indicate debility. The soft and moderately full pulse, which belongs to the antero-superior organs, is regarded as indicative of a tranquil, pleasant state of the system. The greatest frequency of the pulse is produced by the Cardiac region. The regions of Patience and Tranquillity give quietness and slowness to the contractions of the heart, while the region of Mortality entirely suspends its action, and the region of Vitality gives it the highest degree of vigor.

A brain well formed and cultivated for physiological purposes, should produce a pulse full, firm, steady, moderately soft, and below rather than above seventy to the minute. The control of the brain over the circulation is easily demonstrated upon impossibly patients.

(An engraving of the physiological head, to illustrate the foregoing principles, will be published in the next number. It will be well to defer binding the volume until that engraving is received.)

ART. II.—BARON REICHENBACH AND PROFESSOR CALDWELL.

[A copy of Professor Gregory's translation of Reichenbach having been transmitted by Mr. Geo. Combe to Dr. Caldwell, has been made the subject of a review by Dr. C., the manuscript of which has been placed in my hands. A portion of this paper I herewith submit to my readers. The greater part being devoted to a discussion of the grounds of rational belief in wonderful phenomena, and showing the absurdity of the course pursued by the opponents of Mesmerism, its publication in these pages would scarcely reach those at whom its admonitions are aimed, as I trust there are very few indeed of the self-conceited and bigoted opponents of progressive science among the readers of the *Journal of Man.*—ED. JOUR.]

“The ‘Researches’ of Professor Reichenbach *may*, and probably *will* be more acceptable and gratifying to ourselves than to most other persons. *They are, on various points, peculiarly coincident with certain sentiments which, both publicly and privately, we have long held, and earnestly defended.*

Of these sentiments one is, that through the instrumentality of **IMPOUNDERABLE AGENTS** the *solar system certainly*, and most probably the **WHOLE SYSTEM OF NATURE** is brought into a state of unbroken unity and kept in action; for we have long contended that, but for the imponderables, material creation throughout its whole domain would be under the control of *vis inertiae*. That there is in material creation nothing that is insulated or motionless, but that every given portion of it moves, and sympathizes more or less *with*, or is in some way more or less influenced *by* every other portion. This universal state of connection and dependence moreover is experienced by all *living matter*, and has an effect alike on its well-being and ill-being. That to no small extent, its action in the modification of human disease has been recognized by the most sagacious and illustrious physicians, in all ages and countries, will not be denied. Nor is it to be held doubtful, that, in proportion as our knowledge of nature shall expand and become more accurate, that recognition will also increase in extent and accuracy, and become more valuable as well in the practice as in the science of medicine. To the description of agency we have now in view belong solar, lunar, and sol-lunar influence, the existence of which, in the modification of human maladies, is as satisfactorily established as is that of any other sort of meteorological action; as indubitably so as is the fact, that while the cold atmosphere of hill and

mountain regions contribute to the production of complaints of the thorax and the joints, the hot and humid atmosphere of a low and flat malarious region subserves the production of abdominal complaints. Nor would evidence be wanting (were we to engage in the discussion of the subject) to make satisfactorily appear the liability of our globe to the agency of comets, and other forms of remote celestial influence.

But by most persons this great *UNITY OF THINGS*, and its influences are denied, because a vast majority of the human race are not in any degree *sensible* of their direct and immediate effects. They do not feel their daily operation and its result. That, however, is no proof, nor does it furnish even respectable testimony that the influences do not prevail. Let a thousand individuals migrate in company into a malarious tract of country. For some time none of them will feel the action of the atmospheric poison, and many of them will not feel it at all. Yet is it in secret operation on every one of them; and a degree of exposure to an exciting cause sufficiently severe will bring it into open action, and produce an attack of malarious disease.

Wherefore then does not each individual of the party suffer from the poison? The answer is plain. Each is not susceptible alike of its deleterious influence—because some of them are stronger than others in their conservative powers. The most highly susceptible, and those who are invalids suffer first—and afterward some of those who are proportionally stronger.

In relation to celestial influences to which we have referred as a cause of disease, the same is true. The highly susceptible suffer from them *first* or perhaps *alone*, while the less susceptible and more robust escape longer or retain their health without interruption. The class of patients that suffers most readily and to the greatest extent from the varied influences of the heavenly bodies is the same that is most readily affected by the magnetic and crystalline influence. And the effect produced in each instance is nearly if not precisely of a like description. It would not therefore be unsound logic to infer that, in the two cases the agent is *identical*. That the same imponderable which prevails in the magnet and the crystal prevails *universally*, and produces effects similar and correspondingly extensive.

There exist however many instances of great depth and strength in peculiar sorts of sensitiveness, which have no perceptible connection with *vital debility*, or with a *want of vigorous and general health*. These specialities are often accompanied by ungovernable and inexplicable *sympathies* and *antipathies*, which lead occasionally to singular results. The conditions productive of them are technically called *Idiosyncrasies*. And whatever may be the experience of *others*, in relation to them, *we* have witnessed them in men more frequently than in women.

Peter the Great had one of them in the form of *native hydrophobia*

—or an *instinctive* dread of water. Nor did he extinguish it without great trouble, resolution, and perseverance. *But he did extinguish it.* James I. could not bear the sight of a drawn sword without screaming, retreating, and almost fainting. The reputed cause of this is well known.

Lord Bacon *often*, we believe *habitually*, fainted at the precise time of the full and change of the moon, though wholly forgetful of the event until he began to feel its approach.

We have an authentic account of a Prussian colonel, who, at the sight of any withered and haggard old woman, was always seized with a paroxysm of grimace and distortion, amounting at times to the verge of convulsions.

We knew a military officer who often fled in dismay from the approach of a spider, and stood aghast at the sight of a dead one, and even of a figure of one, when he would have marched with coolness on a '*forlorn hope*,' or to the cannon's mouth.

We knew a gentleman who, in the largest chamber covered with a carpet, in the midst of deep darkness, could tell in a moment if a cat entered it with her stealthiest step and in perfect silence. Nor could he tell in what way or through which of his external senses he made the discovery. When interrogated on the subject, his only reply was, that he experienced a peculiar and disagreeable feeling which told him that there was a cat in the room. Nor could he look on one during daylight without experiencing a sense of horror.

Many persons, men we believe more frequently than women, sicken and often faint on feeling fur or feathers, and at the sight of blood. In our Revolutionary war an officer, a near kinsman to us, at the close of a battle in which he had behaved with signal gallantry, sickened at the sight of the blood that was on his sword, and was obliged to place the weapon in the hand of a comrade, to prevent its dropping from his own.

The late Professor P. himself, one of the boldest and best surgical operators of the age, could not witness an operation by another surgeon without recoiling from the sight and experiencing *usually*, we believe *always*, more or less of sickness. Hence he rarely if ever *assisted* other operators except by simply giving some directions and then turning from the scene.

It is well known that some persons feel at times toward others, on the first sight of them, deep and irremovable *antipathies*, and at other times strong and lasting attachments. Shakspeare has immortalized his belief of the truth of such occurrences, in the tragedy of Romeo and Juliet. And we ourselves have witnessed two cases no less romantic—though not so tragical.

A young gentleman and a *fair one* saw each other for the first time, from the opposite sides of a table, at a late dinner—'late' we mean in the day—for many years have elapsed since the time of the event. Nor had they ever previously seen or even heard of each

other. And early on the following morning the gentleman announced to me their MARRIAGE ENGAGEMENT. He avowed moreover that, on his part the attachment was the product of but *a moment*; and that he had received from the lady a like acknowledgment.

The other case was still more extraordinary. It occurred in a clergyman about the *age of sixty*, a widower, having a family of six or eight children, and a maiden lady who had long previously taken leave of her teens. The parties met for the first time in the evening at a social tea-drinking, fell desperately in love with each other at a glance, plighted their mutual troth next morning, and in a few days afterward were bride and groom.

We may safely add, that in these two cases of '*first-sight love*,' the power of beauty had no agency. The parties concerned were exceedingly plain, and very far from being fascinating in their manners.

In a work entitled the 'CURIOSITIES OF MEDICINE' we find recorded the following event, which occurred in England, narrated in such a manner, and under such circumstances, as forbid us to withhold our belief of its truth. The high and responsible character of its narrator moreover adds to its credibility.

One of the parties to it (though a man of family and standing and not an actual *woman-hater*) was so wanting in gallantry and devotedness to the fair sex, and associated so little with them, that he hardly knew himself whether he most liked or disliked them. He was induced however by persuasion to accompany one of his friends to an evening music and dancing party.

Not long after their arrival at the scene of gayety and merriment the friend was surprised to see his ungallant comrade in earnest conversation with a lady whom he had never beheld until that evening, and whose acquaintance he had but five minutes previously made. And, a few minutes afterward the surprise of the friend was augmented by seeing him spiritedly engaged with her in the dance.

The dance being terminated and the lady seated, the friend advancing to him congratulated him on the vivacity of his spirits, the gayety of his manner, and the charming new acquaintance he had just made.

'Ah! replied the altered man, 'do not mock me by your ill-timed congratulation; I am the most unhappy being on earth!'—'Pray, Sir,' said the friend, 'has any misfortune befallen you?'—'Oh! yes, Sir; that lady I have just danced with *is married!*'—'And why, in God's name, my friend, should that distress you?'—'O! Sir, pray don't talk to me so. I must leave this party, and this country—I am a wretched and a ruined man!'—Nor could any remonstrance restrain him. He left the party immediately, and soon afterward set out for the Continent, with a full intention never to return.

Nor was the strong '*first impression*' confined to him alone.

His new 'lady-love' had felt it with equal suddenness and equal intensity.

Though she was then the wife of a young clergyman, to whom she was attached; yet did she assure her sister in a tone of distress, on their return from the party, that she had felt what she denominated a '*shock of attachment*' on the first sight of her new acquaintance (the gentleman with whom she had danced) accompanied by a *conviction* that she should yet be married to him. Nor could aught remove the impression from her mind and the impression proved *prophetic*.

Not long afterward the young clergyman, who occasionally engaged in the sport of the fox-chase, was killed by a fall from his horse. And information of the event having reached the ear of the wandering lover, he returned to England and married the widow.

These instinctive idiosyncratic phenomena belong to the same category with the effects produced on their audiences, by able orators and stage-players, many of which are witnessed, and one of which we ourselves in a consummate degree experienced.

The event occurred, very many years ago, at the performance, in Philadelphia, of the 'Rival Queens,' by the two most celebrated actresses of the day—one of them being a younger sister of Mrs. Siddons.

By the exquisite representation of the murder of the mild and lovely Statira by the beautiful but fierce and vindictive Roxana, I, though familiar with the drama, became so completely fascinated and robbed of my power of discrimination, as to fancy the scene *a reality*. No sooner, therefore, did the latter royal fair one raise her dagger, to plunge it into the heart of the performer, than I sprang on the stage to prevent the deed, and would have immediately disarmed the murderer had not a gentleman near me arrested my arm, and dispelled my delusion.

As may well be supposed, this incident converted the tragic representation into broad farce. From even the heroines themselves it elicited more than a smile. And, for subsequent months, we never entered the theater, without being greeted, especially by the gallery and some portion of the *pit*, with marks of recollection.

[After making copious extracts from Reichenbach's work illustrating his experiments, Dr. Caldwell concludes as follows:]

"In conclusion of this paper we shall only observe, that our own course of experiments with magnets and crystals, in which we are still engaged, has not yet been very extensive; but that, as far as it has been pursued, it has proved successful enough to afford encouragement to hope and promise to perseverance. Though we have hitherto met with no subject of a very high order; yet have we found no inconsiderable number possessed of sensitiveness abundantly sufficient to satisfy us, on the ground of our experience, of the truth of the minor experiments of Professor Von Reichenbach, as set forth in his 'Researches.' And, in relation to those of a

more striking and extraordinary character, we should blush to deny our entire belief to the report of them by *a philosopher* and *a man* of his distinguished reputation and standing, published under the sanction of his own name. We, therefore, most heartily and sincerely recommend the work to the patronage and perusal of the American community."

ART. III.—RESEARCHES IN ORGANIC CHEMISTRY.—BY DANIEL VAUGHAN.—(CONTINUED.)

It may be interesting to know why the kind of action described in the preceding articles should be confined, almost exclusively, to organic matter. The success which has attended the application of extremely weak galvanic forces to overcome the highest energy of chemical affinity, might induce the belief, that oxygen should be separated from carbon by the feeble currents of electricity which circulate along growing plants, or by the manifestation of the same power arising from the formation of vapor. But it would seem that a similar course of reasoning might be adduced to prove, that all salts in solution should lose their compound nature whenever the water was expelled from them by heat; that the evaporation of the ocean should cause the decomposition of the salts it contains; and that the currents of electricity which traverse our globe, should be fatal to the existence of every compound body on its surface. A careful examination of the principles of electro-decomposition, and of the means necessary to insure the success of currents of low intensity, will enable us not only to remove this apparent difficulty, but also to discover *from what property of carbon proceeds its adaptation to the purposes of life.*

As a chemical agent, electricity controls the force of affinity, not only by disuniting substances which are combined, but also by preventing their combination. In the well-known experiment with the cups, Sir H. Davy found that an acid and a base may be made to pass through the same solution, without forming a salt, while under the influence of galvanic currents, which thus prevented the formation of all compounds they were capable of decomposing. In nearly every instance of electro-decomposition this resistance to affinity is manifested, and is essential to the success of the operation, which could not proceed, if the component parts of the body returned to a state of union according as they were separated. Now, it is evident that a certain amount of the galvanic force must be necessarily expended in preventing the recombination of the substances, which have resulted from its action; and the remainder will be employed in separating fresh portions of the compound body. Whenever the whole force of the current is expended in resisting the reunion, no

decomposition takes place. To lessen, therefore, the tendency to combine, or to obstruct its action, must facilitate the decomposition; and to remove it entirely, would cause all compounds to yield to the influence of an electric current capable of separating a single atom, —or far weaker than any we could detect by the most delicate galvanometer.

The coincidence of these views, with the result of observation, is very striking. In the experiments of Bequerel, Bird, and Cross, it was found indispensable to the success of the decomposition by feeble currents of electricity, that a porous partition should separate the portions of the solution in which both poles of the battery were immersed, and that their mixture should be thus prevented as much as possible. A porous cup was used to inclose that portion of the liquid in which one pole was situated; the pores being found capable of affording a passage to the electric currents, and to the elements they transferred to the respective poles. An animal membrane fitted to the extremity of a glass tube, has been successfully used for the same purpose, instead of the porous cup. A farther obstruction to the mixture of the portions of the solution around each wire, was found to favor the efficacy of weak currents. By using a glass funnel stopped with a plug of plaster of Paris to inclose one pole, Bird succeeded in reducing potassium, sodium, silicon, boron, and other bodies by means of electric currents of an exceedingly low intensity.

The object attained by the use of these partitions was evidently to prevent, as much as possible, the mixture of the two elements which were transferred to each electrode. The diffusion of these elements through the liquid solution would call their affinities into play; and to prevent their union, a portion of electric force should be expended, which might otherwise be employed in separating fresh portions of the compound body. The weakest currents are not, therefore, devoid of chemical action, when the tendency to recombination is prevented; and whatever means are used to accomplish this object, the effect is the same. When the elements are evolved from the fluid according as they are disunited; when they enter new combinations, or even when they act chemically on the metal which forms one of the poles, the decomposition is very much facilitated. These facts concur in proving, that on the removal of the obstructions which proceed from the tendency of the elements to reunite after their disposition, the feeblest and the most powerful currents of electricity should exercise the same chemical action, differing only in the duration of time which they require to decompose a certain amount of any substance.

A peculiarity which carbon possesses, obviates the necessity of any of the contrivances alluded to, in order to separate oxygen from its compounds; and under certain circumstances renders them sensible to the influence of all electric changes. At a very intense heat, carbon ranks with sodium and potassium in its affinity for

oxygen, while at ordinary temperatures, it manifests the same indifference to that element as gold and platinum, and has been used instead of these metals in the galvanic battery. Were carbon, therefore, separated from a solution of carbonic acid by means of electricity, it would have no tendency whatever to oxydate, at a low temperature, however finely it may be divided; and no part of the force of the current would be expended in preventing the oxydation. The whole energy should therefore be exerted in decomposing each atom of the carbonic acid, and, though the weakness of the current may retard its action, it could not cause it to be entirely suspended.

The compound resulting from the decomposition of carbonic acid by evaporation, is more liable to oxydize than pure carbon, and undergoes a spontaneous fermentation on some occasions. But this never takes place below 32 degrees Fahr.; and even below 43 degrees Fahr., it proceeds so languidly that the effect in retarding the electro-decomposition is not very material. At low temperatures, little or none of the electric force is wanted in overcoming the propensity of humus to oxydate, especially in the land where it possesses more than ordinary stability. Hence the evaporation of water, at low temperature, causes a decomposition of the carbonic acid which it absorbs from the air; while a high temperature causes this action to be impeded or arrested by the great affinity of carbon for oxygen, and the consequent fermentation of the humus. It is also reasonable to suppose, that the soil acts like the porous partitions in the apparatus for the application of weak galvanic currents, and impedes the union of the oxygen with the carbonaceous matter, from which it has been separated. We may also account, in the same manner, for the consolidation of mortar, of brick, of porcelain, and of the several geological formations produced from aqueous deposits; as the porosity and moisture in the several substances must render the currents of terrestrial electricity adequate to chemical decompositions which it could never produce in solutions; and even the galvanic decomposition which plants perform is favored by the porosity of vegetable tissue.

The variable affinity of carbon for oxygen is essential to the changes which prevail in organic bodies, and renders them subservient to the influence of the electricity developed by the evaporation of water, by the friction of the air against the land, and by the operations in the interior of our planet: and these fertile sources of chemical power, with the assistance of light, serve to purify the air, to prepare food for plants, and to preserve the equilibrium of the organic world. It has been already shown that heat promotes the formation of carbonic acid, and that cold favors its decomposition by the agency I have described; and hence the atmosphere contains the greatest quantity of carbonic acid in the end of summer, and the least at the end of winter. The variation in the amount of this gas in the air, is frequently adduced as a proof that its removal is effected entirely by growing plants; but a careful examination of

the time when the variation occurs, affords evidence subversive of this fanciful theory, and calculated to reveal to us the true laws of nature.

The fermentation of humus, both on land and water, not only transfers carbonic acid to the air, but gives rise to a circulation of galvanic currents along growing vegetables, which is the source of their vitality, and constitutes the great agent of assimilation in a large number of sea weeds, while on land, it co-operates with evaporation and with light in the purposes of vegetation.

The relative proportions of organic matter in different locations on land, bear record of the controlling influence of heat and cold, and corroborate the evidence furnished by the analysis of the atmosphere. Accumulations of peat occur in all marshes in high latitudes, and even in warm climates they are found in places of considerable elevation, where the temperature is much reduced. The submersion of these regions, under water, would cause the conversion of peat into coal; and, though I shall not describe the operation in this place, it is evidently less difficult than the formation of coal from a forest of trees. It is certainly absurd to suppose that the formation of coal has ceased, though perhaps it proceeds less rapidly at present than in the early ages of the world, when there was a larger amount of carbonic acid in the air, and probably a greater intensity in the currents of terrestrial electricity.

But the most important compound resulting from the decomposition of carbonic acid is, the substance called humus, which exists in all arable soils, and which experience has long recognized as the great principle of fertility. Whether this substance is absolutely necessary to vegetation, or whether plants could increase the quantity of carbon they contain, in the absence of organic matter in a solid or liquid form, cannot be determined by direct experiment. It is impossible to exclude humus entirely from growing plants, as it exists in the air in the form of dust, and even in distilled water; and the exclusion could only be effected by depriving the plant of the two conditions which are essential to its vitality. The demonstration of the first principle of natural philosophy presents a similar difficulty. Since it is impossible to cause a body to move on our globe, without encountering resistance, or to prove by direct experiment, that, were all impediments removed, all motion should be perpetual. It has been found, however, that the loss of velocity grew less in proportion as the resistance was removed, and from this it has been inferred, that were it possible to remove it completely, the velocity of a moving body should suffer no diminution.

A similar course of reasoning will furnish a solution to the present question, as the diminution of humus in the soil has the same effect in lessening its capability to sustain vegetation. Wherever it is partially removed from the land by water, or exhausted by tillage, vegetables languish; and in the experiments of Boussingault, when the earth was deprived of organic matter by calcination, plants sel-

dom exceeded double the weight of the seeds that produced them. A less increase of weight resulted from the use of a contrivance, which was erroneously supposed to be capable of excluding all the dust of the air. (The air, indeed, could not be entirely freed from this dust, even if made to pass through water, a plan which, I believe, has never been resorted to.) We must therefore conclude that the growth of plants requires the presence of humus or organic manure in the soil, that it should cease with the total exclusion of these substances, and that these fundamental truths of agricultural chemistry admit of the same kind of proof which has served to establish the first principle of Newtonian philosophy.

ART. IV.—THE AMERICAN KEPLER—KIRKWOOD'S ANALOGY.

"At the last meeting of the American Scientific Association, at Cambridge (August, 1849), a letter from Daniel Kirkwood, of Pottsville, Pa., announcing a new principle in astronomy was read by Prof. S. C. Walker, and received by the Association with a degree of liberality which forms a refreshing contrast to many of the proceedings of other scientific bodies. The following extracts from the proceedings will show the character and reception of this discovery:

Extract from Mr. Kirkwood's Letter:—"While we have, in the law of Kepler, a bond of mutual relationship between the planets, as regards their revolutions round the sun, it is remarkable that no law regulating their rotations on their axis has ever been discovered. For several years, I have had little doubt of the existence of such a law in nature, and have been engaged, as circumstances would permit, in attempting its development. I have at length arrived at results, which, if they do not justify me in announcing the solution of this important and interesting problem, must at least be regarded as astonishing coincidences."

"Mr. W. then remarked that the members would be struck with the ten years' perseverance of Mr. Kirkwood, in carrying out this leading idea of his life,—with his patience in waiting a year for an opportunity of making known the result,—and with his modesty (the characteristic of genuine worth), in offering to the world, the most important harmony in the Solar System discovered since the time of Kepler, which, in after times, may place their names, side by side, in honorable association.

"At the instance of Mr. Kirkwood, Mr. W. had tested the numerical accuracy of the hypothesis, by the use of the most recent values for the elements of the solar System. * * * We may

therefore conclude that, WHETHER KIRKWOOD'S ANALOGY IS OR IS NOT THE EXPRESSION OF A PHYSICAL LAW, IT IS AT LEAST THAT OF A PHYSICAL FACT IN THE MECHANISM OF THE UNIVERSE."

"If, in the course of time, the hypotheses of La Place and Kirkwood shall be found to be laws of nature, they will throw new light on the internal organization of the planets, in their present, and in any more primitive state, through which they may have passed."

Professors Henry and Pierce expressed their decided approbation.

Aug. 21, Dr. B. A. Gould remarked: "Mr. Kirkwood's theory, as regards the rotation of the planets will, if found to be true,—and the presumption seems to-day strongly in favor of its truth—furnish a remarkable and unexpected argument in support of the Nebular Hypothesis. The minds of many have been wavering of late with regard to this hypothesis; their doubts have been strengthened by the unqualified assertions that all nebulas are resolvable; but this analogy of Kirkwood tends most strikingly to confirm it—so much, indeed, that if this latter be true, I do not know how any one can resist the argument which it furnishes in favor of the former, in so far as it applies to our solar system. It is then no longer a hypothesis, but becomes a probable theory."

"When we are considering the evolution of order from ~~chaos~~, we cannot pretend to a knowledge of all the physical forces which exerted an influence. We go back to a supposed time when the planetary spaces were filled with nebular matter; we assume the existence of certain nuclei or centers of attraction; and, from our knowledge of the solar system, as it now is, infer the relative force which these several centers of attraction must have exerted, and assign to each its proportionate realm. If now we find that the spheres of influence belonging to the several nuclei are harmoniously connected, by a simple formula, with the periods of rotation as observed to-day,—an element before omitted in our investigations—we discover a remarkable corroboration of the probability of our hypothesis. This is what Kirkwood's formula professes to be—a simple relation between the time of rotation and the diameter of the sphere of attraction."

"I do not wish to express myself strongly, but certainly when we look back upon the labors of Kepler, who strove so many years with results so unpromising, until he discovered the laws which underlie the whole fabric of our solar system, and then turn to Mr. Kirkwood, a teacher in the interior of Pennsylvania—who without the sympathies of kindred minds, or the use of any library of magnitude—without calling even upon the aid of strict mathematical analysis—has fixed his attention upon this one problem, and investigated it in all its bearings, until after ten years of patient thought and labor, he has arrived at such a result as this—we cannot but be struck with the similarity of the two cases; nor can we consider it as very derogatory to the former to speak hereafter of Kepler and Kirkwood together as the discoverers of great planetary harmonies."

**ART. V.—THE PRESIDENTIAL CANDIDATES—TAYLOR,
CASS, VAN BUREN, SMITH.**

THE promise given in the first number of this Journal, to investigate the characters of our presidential candidates, by the psychometric process, and report the result, has already reached the limit of the appointed term for its fulfillment. Willingly would I have postponed still further the execution of this undertaking, for it imposes a responsibility too delicate and embarrassing. The critical investigation of character in private, for the benefit of the individual, is a matter to which I have long been accustomed—the benefits of which I highly appreciate. But the public investigation of public men, and free condemnation of their faults, is not only a delicate and responsible task, but one from which our kindly sentiments recoil. Public censure is a species of punishment, and often, like other punishments, serves only to injure, instead of benefiting those to whom it is applied. Hence, although in my psychometric investigations, I have met with evil indications of character in our public men, I have not deemed it my duty to proclaim such discoveries, but prefer to dwell upon the more pleasing aspects of human nature. In the present instance, the nature of the investigation and the characters of the parties are such as to require no little time, caution, and research before arriving at a final and accurate decision. The time and attention necessary before pronouncing in an accurate and authoritative manner, I have not been able to bestow, under the pressure of other duties. Let it be understood, therefore, that in presenting the psychometric experiments in reference to these distinguished gentlemen, I do not claim to have reached a final decision upon the subject, or to have committed no error. I have merely made such experiments as I have made on other occasions, and recorded the results, without undertaking the critical investigation, repetition, and comparison of facts, by means of which, psychometry may be made to approach the most positive accuracy of conclusions.

Let us first take up the name of the gentleman who has been longest before the public in political life, and is therefore, perhaps, the best known. Mr. VAN BUREN, without possessing any brilliant, bold, or extraordinary talents, is nevertheless a remarkable man. Phrenologists, I think, in estimating his character, have generally been influenced by his political reputation, and have scarcely given a fair estimate of his true development. Mr. Van Buren has certainly a very fair development of the moral organs,

and is by no means deficient in the organ of Conscientiousness; nor has he any *excessive* development, as many suppose, of the organs of Cautiousness and Secretiveness. That region is well developed, and derives additional activity from the fact that the occiput is not sufficiently elongated to give a haughty or overbearing character, and consequently, Reverence and other lateral organs control his deportment. No one is freer from the arrogance or rudeness of deportment which belongs to the lower occipital organs, and more careful to exhibit, on all occasions, due respect to others, or to public opinion. It is this species of moral caution, arising from Reverence, or respect for persons, which is so marked in the character of Mr. Van Buren, and which has been commonly confounded with the lower faculties of Cautiousness and Secretiveness. Upon the whole, Mr. Van Buren has a decidedly good head—not of the highest class in the size of the organs, but decidedly well developed in the moral and reflective region, and also very full in the basilar organs, but not sufficiently so, considering the proportions of the whole, to give it a bad character. In that respect he is but an average specimen of the humanity of the present times, with too much of the higher organs to be a bad man, and too much of the lower to have an unclouded perception of moral truth, or to be competent to lead the life of a true philanthropist. He is, in short, by the indications of craniology, simply a **VERY RESPECTABLE GENTLEMAN**, capable, by force of character and force of intellect, of rising to an honorable position under almost any circumstances, yet calculated to achieve an honorable career, with far less of the unpleasant collision (arising from the lower occipital organs) than is common among our energetic and domineering Anglo Saxon people. The basilar depth of Mr. Van Buren's head is such as to produce a great amount of physiological energy, and an ample nourishment of the whole frame. When I saw him some eight years since, I perceived this condition, and told him that it would probably increase, as the organ of Nutrition was remarkably large, indicating a tendency to corpulence. This physiological power, guided by a good share of Energy and Firmness, has made Mr. Van Buren one of the most efficient and indefatigable of our public men. At the same time, the cunning policy of the basilar organ located at the ear has been sufficiently controlled by the organ of Conscientiousness, or Integrity (which is really well developed), but has been sufficiently operative to give Mr. Van Buren his peculiar *politic* reputation.

The PHYSIOGNOMY of Mr. Van Buren coincides with the general character of his head, and indicates a general activity and cultivation of the brain. The indications of the moral and the animal organs in the face are all strongly marked, while the eye presents indications of incessant and vigorous intellectual action, as well as active social sentiments. The expression of the mouth is rather benignant and firm. The physiological indications are such as

would point to vigorous health, and general activity of the internal viscera. Although the lower part of the face is a little too full, it may still be considered a decidedly good face.

With the indications of craniology and physiognomy, we shall find the results of psychometry entirely coincident. It is true that a psychometric subject, in whom the animal organs are remarkably large and active, would give to Mr. Van Buren the worst character that has ever been assigned him by political opponents; others, too, in whom a decided and uncompromising radicalism produces an intolerance of the commonplace morality and policy of the world, have no very kindly appreciation of his character, and criticise with severity his worldly, politic, and selfish tendencies. Yet those who are capable of taking kind and liberal views are not disposed to condemn or criticise his character so severely as has often been done by his opponents. (I must earnestly impress upon those of my readers who are disposed to try psychometric experiments, not to be misled by trusting to the opinions pronounced in all cases. It often happens that the psychometric subject is quite incapable of appreciating the characters of particular individuals, in consequence of not sympathizing with them, or not having the faculties necessary to understand their character. Indeed, they will frequently admit, if asked, that they do not sympathize with the character, and can scarcely do it justice. In such cases, little or no reliance can be placed upon the impartiality of the opinions.)

A letter written by Mr. Van Buren, just upon the eve of the Buffalo Convention, in reference to the great subjects and movements in which he was then engaged, and apparently written with much interest and feeling, was tried upon several psychometers. It produced a remarkable effect in the way of excitement and fatigue, giving them the impression of one whose mental exertion and excitement had produced a very weary and unpleasant condition, such as usually follows over excitement and exertion. The letter was torn into fragments, which were placed upon the foreheads of several individuals simultaneously, and it was very interesting to notice the differences produced by their peculiar cerebral developments and education in their estimation of his character. Such a course of experiments, in which we should combine the different results, and make due allowance for those which were influenced by any improper bias, so as to arrive at the just decision of a well balanced brain, would be necessary to scientific accuracy. Without pretending to any such accuracy at present, I merely offer the following experiments. The letter in question being written under mental excitement, and in reference to elevated objects, was probably a remarkably fine specimen for the portraiture of its author; that is, it presented him in the finest mood for the painter, and there are few psychometers who will not be influenced in their opinions by the mood in which any document is written. A portion of this letter being placed upon the forehead of Dr. —, a gentleman of

healthy constitution, vigorous, clear, and highly cultivated mind—he gave the following impression:

“Judging by the cerebral influence which this excites, I should say there was a great deal of *frontal* and *temporal* action—with a want of tone—an excitability running into debility. There is more activity in the anterior coronal region than in the posterior coronal or the occipital. This excitement of the anterior organs is accompanied by some congestion and tendency to headache and slight sickness. It produces nervous excitement and nausea. The brain is pressing in front—and in the upper part of the temples. There is some oppression in the lungs along the sternum.

(Q. What would you say of his pursuits?) They seem to be professional—legal.

(Q. What do you say of his rank or sphere of life?) I begin to feel more tranquil as the excitement passes backward. He occupies an elevated position with commanding influence.

(Q. What do you say of his talents?) He has intense intellectual action—as to its extent, or philosophic scope, I cannot say. The reflective tendency predominates, with great quickness, and sagacity. He has not so much capacity for exact science as ready penetration into characters. He has more sagacity than elaboration. He wishes to exercise his faculties on men. I think he is a man in active life—I suppose political life. He feels ready to meet any competitor. He has not a very extravagant estimate of himself, yet he feels competent to meet any one.

(Q. Is he a speaker or a writer?) I think he will exert a controlling influence over an audience. He would have an intense intellectual action—and a strong tendency to public speaking—could hardly avoid it.

(Q. What of his integrity?) My impression is favorable to a sense of honor. He has Cautiousness, Secretiveness and Firmness. The excitement now is principally in the superior organs. I feel very little basilar action. I think that after he wrote this letter he had a feeling of serenity—he was satisfied with his course.

(What of his manners?) They are firm and courteous—disposed to please and be polite.”

An autograph of Mr. V. B. being tried by Dr. ——, a gentleman in whom the perceptive organs are remarkably large and active, and who was consequently disposed to go more fully into detail, produced the following impression, which was pronounced so rapidly that no exact record of the questions proposed was kept. The experiment was made immediately after he had decided upon the autograph of Gen. Taylor, and he consequently frequently referred to his impression of Gen. T. in describing the present specimen.

“This does not stir up any angry feelings—it feels better physically than the other. I hardly know what to say of him—he seems rather a pleasant companion. He was thinking rather hard at the

time this was written, and was puzzled about seeing into something. I don't get distinct ideas—I feel rather non-committal—feel as if I couldn't describe anything right—an indefiniteness. I don't comprehend. I can't get at any point—he might have been fatigued when he wrote it. I don't see anything actually amiss, but I feel too much confusion to describe. He has not so much force of character as the last had—not the same kind—better adapted to intellectual investigation. He has a good deal of intellectual power, but not the same animal force. It made my perceptive organs ache at first, now it feels lighter—there is more acuteness of perception—a high moral tone—a great deal of Cautiousness—a great deal more of literary taste than the other—education has done much for him. He seems a younger man, or one who had not had so much physical fatigue—there is more of the buoyancy of youth—he is cheerful yet has a great deal of deep thought on moral and intellectual subjects—if on politics, it is on the reformatory movements and moral questions. Selfishness and cunning are not so prominent as in _____. If selfish, it is not of a low kind. His ambition is not to outlive his glory, but to make an impression that would last, like Clinton with his improvements. He aims to have a character that shall live after him, like John Quincy Adams. He partakes in the movements as to land reform, slavery, universal suffrage, and other reforms. His mind has probably changed in this matter. He would not go ahead of the spirit of the age, but would go with it. He entertains these views honestly from deep thought. He would hold a subject at bay until he would give it a fair examination. He is not profound in matters that are abstract and original—he examines those which have been investigated before. He is prudent, yet not so secretive as to be dishonest. He is frank when he professes to be, yet carries an air of cautiousness and study. It makes me feel indecisive—I do not know whether I have told anything right. He is shrewd in tactics, has foresight, skill, and management, but no low trickery. He has a good deal of intrinsic force—is a whole man, intellectually, morally, physically—is independent. He would command respect rather than admiration. He is faithful to friends—respects highly the one he is writing to—is not selfish in pecuniary matters, unless from necessity. He dresses with taste—neat but not foppish—is polite, affable, pleasant, makes one feel at home—pays more attention to his guests than Gen. Taylor; is rather disposed to flatter—would make a good courtier. He desires to please all yet be a partisan. Taylor is more off hand—this man is more deliberate, and would be more competent to the duties of a President from his own knowledge and judgment."

The same autograph of Mr. Van Buren was tried twice upon Mr. R., a radical in his modes of thought. He did not feel in sympathy with it, yet spoke rather minutely of the sentiments of the writer as follows:

"I do not enter into intimacy with it readily. He seems a man

of genteel appearance. It produces severe pain in the frontal part of the head—more pain in the region of the heart—a benumbing sensation of hand and arm. It seems as if I had a great deal to do—the business a great way off. I feel wearied, languid, disposed to rest. There seems a painful anxiety—some occurrence has wounded his pride; yet he is determined to go contrary to the wishes of others concerned in the same business. He is a person of considerable intellect, yet seems backward and indecisive in going on. A great deal is expected from him. He is undecided as to his course. His mind is made up, yet as it is contrary to the wishes of others, he wishes to make them agree with him. He is greatly wounded in his pride. Thinks he has been mistreated—knows he ought to have been consulted. He imagines something is demanded which is degrading—he is precise in his self-esteem, and has been wounded in a tender place.

(Q. What are his pursuits?) He is concerned in the government, in some high political station—seems fit for nothing else—seems almost to imagine himself commander of the Union. He has almost abandoned active life. He appears frank but has not a high degree of conscientiousness—it is influenced by a consideration of distant results."

On the other occasion he spoke as follows:

"I am not in sympathy with him. He seems to be writing on some subject calculated to elevate himself, and yet wishes to do something, or show a disposition to do something, for mankind. His position is in the highest rank. He is wealthy and lives in the finest style. He is not religious, but is a fair specimen of a politician. He maneuvers but does not sacrifice a great deal of principle—he is tolerably honest. He aims high, grasps much. His benevolence is medium. His manners are affable. He is a perfect gentleman—but there is something peculiar—no one can understand him."

After the autograph of Mr. Van Buren had been pronounced upon by Dr. —, I endeavored to remove from his head the unpleasant influence by dispersive passes, and after a few moments requested his opinion upon another autograph, which he gave as follows:

"I feel now more occipital and basilar excitement. I feel less elevated and amiable—there is more posterior and basilar action—there is a longer head. I feel more of the combative—more ready for contest—to get into an argument and prosecute it with pertinacity. There is more action of the brain along and below the middle horizontal line. I have less tendency to reflect, more to observe—could collect facts—control details—discuss with zeal. There is much excitability, principally of the posterior and lateral organs. He is not very sensitive.

(Q. What position does he occupy?) He has force of character, energy, power of accumulating knowledge; he is not very sensitive

or modest; he would probably be esteemed more highly than he deserves.

(Q. What are his leading motives?) To contend and triumph. He has considerable vanity; some imperiousness; he aims to gratify his personal ambition; has no lofty views; feels as if in Congress; aims at power.

(Q. What would be his views in reference to war?) He has rather a warlike disposition—a doggedness; I perceive nothing very humane or philanthropic. He has the common idea that men must fight if insulted, and nations also.

(Q. What of his integrity?) Not a prominent element of action—it is only incidental or accidental. He would be straightforward and open rather than covert.

(Q. What of his grade of talent?) He has a matter-of-fact mind—more capacity for accumulating knowledge but less sagacity as to men than the last.

(Q. What of his pecuniary character?) He looks upon money merely as a means; but self predominates over philanthropy.

(Q. What of his patriotism?) He has a clannish patriotism; it would be very decided against foreign powers.

(Q. What of his manners?) They would be cold and lacking in courtesy when there was no especial object to be gained. It gives me a splenetic, disappointed, dissatisfied feeling.

(Q. What would he think of Neurology?) He would not take any interest in it, nor think favorably of it.

(Q. What do you think of his person?) It is stout and muscular, not delicate."

This was the autograph of Gen. LEWIS CASS, written under no exciting circumstances, as far as the letter was concerned. The opinion coincides, in the main, with other good psychometric experiments. It coincides very well with craniology and physiognomy, for the face of Gen. Cass is not expressive of a very elevated character. The moral region of the face is not so strongly marked as in the case of Mr. Van Buren, while the animal region is rather fuller in proportion, as his face is not quite so strongly marked in the upper as in the lower region. The regions of Disease and Sensitiveness are rather moderate, and the occipital organs are decidedly larger than in Mr. Van Buren, giving him a longer and larger head. That his intellect should dwell more upon details than upon philosophy or general principles might be deemed inconsistent with the phrenological indications of his forehead; but in truth, no matter whether the upper portion of the forehead be prominent or not, the occipital and basilar organs, if preponderant, always prevent habits of philosophical thought. The basilar organs render us incapable of patient reflection, and favor the action of the perceptive at the expense of the reflective organs, while the occipital give the mind an exclusively practical, gross, and selfish direction, greatly narrowing the scope of thought and confining it to

matters of immediate interest. Hence it is that Gen. Cass, with a good forehead, is nevertheless like many others unfitted for the sphere of thought which has commonly been ascribed to the superior organs of the forehead.

The character of Gen. Cass being rather more simple and obvious than that of Mr. Van Buren, there has been less diversity of opinion among psychometers—who readily recognize selfish ambition as its leading element, and perceive no very strong moral sentiment. The following impression of Gen. Cass being very brief, may be given as a fair example of the estimate frequently formed by psychometers in whom the moral organs are well developed :

"He might be a politician and enjoy it. My head feels as if growing in the *upper back part*. He is not very benevolent—rather deficient in that respect—might be generous off hand. His moral faculties are not highly developed—the selfish and ambitious predominate—not very conscientious—might shift his party—would be a strong partisan—not of the highest order of talent. Combativeness large—he would be an advocate of war—would not be very distinguished in battle. I would not vote for him."

The difference of opinion among psychometers, as to Gen. Cass, has been in reference to personal manners and pecuniary inclinations. Some, according to their own taste and affinities, would regard him as cold, haughty, and lacking in courtesy—others, perceiving his capacities, would speak of him as affable and disposed to please—while others perhaps more discriminating, would recognize him as being not only cold and repulsive to those whom he considered unimportant, but highly polite and attentive to those whose position commanded his respect.

The three following impressions of Gen. Cass were given as follows—No. 1, by a young gentleman of excellent character and high impressibility, of decidedly radical and anti-slavery sentiments; No. 2, by a physician of very good intellect and impressibility but not disposed to think highly of the moral sentiments of mankind; No. 3, by a young gentleman of cultivated mind disposed to look upon character and talents with very favorable sentiments.

No. 1. "I don't like him—he would be a cold, overbearing, haughty man. He feels disappointed—has met with something he dislikes. He occupies a high station—I don't think he is worthy. He is capable of some good acts, yet has many faults. He has firmness only in what conduces to his elevation. He is a politician—is crafty. I don't think much of his moral character. (Q. What of his courage?) He has not the courage to encounter great opposition—he would seek to be on the strong side. He is more of a speaker than writer—not very eloquent—rather logical than fanciful. (Q. What are his views as to slavery?) He does not care much about it—would as lief have slaves, or see it exist, as not. * * * (Q. What of his military capacity?) It is ordinary. (Q. What of his character in money matters?) He is avaricious, selfish. (Q. What

is the source of his reputation?) He gains reputation by the influence of some of his friends and by maneuvering; he has great power of impressing some persons in his own favor. (Q. Is he honest?) Not very—I don't like the man. (Q. What of his manners?) They are good but aristocratic—rather austere—with not much social feeling."

No. 2. "I should suppose he was serious or reflective when he wrote it. His mental capacities are full, but not great or large; he is rather quick to catch ideas—uses Comparison rather than Causality. He is usually of a happy turn of mind. He is tolerably firm—has a good imagination—large Ideality—has a degree of self-esteem, not very large however. (Q. What are his leading motives?) He is disposed to be placed where the world places him. His moral character is rather indifferent—he'd practice according to circumstances. He can be a very honorable, moral man, or he can be the reverse, as he suffers his reason or his passions to govern. While placed in easy circumstances he is inclined to be as honorable as circumstances would allow him; but in other circumstances he might be led astray. (Q. What are his sphere of life and pursuits?) I was trying to see if he was in office, but I don't see it. [Note, this autograph was dated in 1843.] If he holds any position it is not a prominent one: he would require an active intellectual life—sometimes physical, sometimes mental labor—something between the sedentary and very active—such as a lawyer doing an active business. (Q. Suppose him in public office, what would be his character?) Pretty energetic—excitement increases his powers, makes another man of him. (Q. Suppose him a politician?) He'd be pretty thorough-going in anything, unless he changed his mind, but if convinced he was on the wrong side, would change his course and go with as much energy on the other side. (Q. Is he fickle?) No, not fickle. (Q. What of the honesty of his motives?) As long as his own circumstances will admit of his promoting the public good he will do so, but he will act differently if his pecuniary situation is inconvenient. If, for instance, he were a whig and poor he might turn democrat from pecuniary motives, but he would not be so energetic as if he had turned from better motives. (Q. If in high office what ambition would he show?) He'd be ambitious to fill it in a creditable manner, to maintain and keep it. (Q. Does the love of money or of popularity most influence him?) Perhaps the love of money predominates, but at that time popularity influences him most. * * * He is patriotic—money would not prevent his patriotism. (Q. How is he as to war?) He might be a good fighting character if excited on field of battle—but would not generally be inclined to it. (Q. What would be his sentiments as to his country's rights?) He would not yield an inch—he gets excited there—his firmness is roused. (Q. How would he act on the Oregon question?) He'd be for 54-40."

No. 3. "He seems genial, pleasant, social, active, aspiring to

high station—he will become prominent—he has considerable force of character, military activity, and energy enough. He is impressive as a speaker—is direct, condensed. He has ambition and energy enough to aspire to anything. He is full of hope and ambition—not satiated. The love of money is subordinate to the love of power. He wishes to make a splendid impression—he has an obstinate, restless energy—is not vicious, yet not governed by the highest sentiments. He may be generous in the ostentatious way—loves to dazzle. His influence is exhilarating, active, and healthy. Benevolence is rather defective. He has energy, ambition, intense aspiration, great firmness—with a vein of bitterness. He is frank and earnest—not really conscientious—he is governed more by hope and ambition. He would be a good officer. His manners are imposing—rather haughty, yet anxious to please but cold and short to those not important to him. He does not creep or intrigue. Conscientiousness is deficient—he is careless in small matters—generally correct in business—not avaricious, not an intriguer, but has no strong moral sentiment—is governed not by a sense of duty, but by ambition. He is not philosophic but literary—might attain some literary eminence—would write a racy and readable essay, not prolix—he is no philosopher—is interested in nothing but action—would not stop to study Neurology, or interest himself in anything which was not all on the outside. He is a quick observer of character, has prompt decision, is a contrast to Mr. Van Buren—is not equal to him in intellect but has a better popular, impressive talent. He has a healthy energy—would be an energetic President—would be favorable to war—would be willing to risk everything—would be apt to have a war with England. As to slavery he would be heedless—I would have no confidence in him. He is of a stately appearance—good height—imposing, energetic—weaker men would be abashed. He is not afraid to encounter any one in debate. His popular harangues would appeal to the passions and pride of the people."

After thus making a variety of experiments—understanding at the same time the character of our psychometers, and appreciating the value of each opinion, we observe a coincidence and unanimity in reference to the most unequivocal traits of character, and an interesting diversity in the appreciation of its minor features, illustrating the different impressions which a public man makes upon different persons in consequence of their peculiar relations. Thus our estimate becomes critically accurate by dint of cautious investigation.

The following description, derived from an autograph consisting of a name only, is perhaps sufficiently accurate to suggest at once to the reader the name of the individual described.

"It seems a man about fifty years of age, occupying a high station. He has been deceived in men, and consequently is a cautious observer. He is straight forward, independent, self-relying. He carries out his own plans—is upright, honest, correct—don't like to depend on others. He would not have much conversation with

them, unless upon business, or something he is interested in. What he has to do he will do promptly, and expect others to do the same. He is rather too stern to be liked by all. He is liked best by friends who know him best. He has a good moral character and is rather of a religious turn, though I think not of a church. In pecuniary matters he feels a little cramped, not having as much as he desires. He spends freely for his own comfort or convenience—is liberal, not selfish. He has a good mind, firm and well balanced. He is not a literary man, but has a capacity for almost anything. He would be a very trusty man in an office with funds. He goes his own course but listens to advice. He has a good deal of ambition for the means of living and for reputation. He has very little vanity or ostentation—but has some self-esteem. He'd be a good leader in anything which required a trusty person. He is not cunning, not a maneuverer, but shrewd to detect imposition. He dislikes ostentation and show—admires a good picture—would patronize it. His passions are not very strong, being kept in check by his power of control. He has a good judgment of human nature—would make a good military man under ordinary circumstances. He resembles General Taylor—not so cunning as —. He is not actually benevolent, yet not penurious. He has a high sense of justice—manly, fair, even-handed justice—is not in favor of severe punishments—justice is stronger than benevolence—benevolence is prompted by sense of justice. He is a fast friend to anything he takes hold of—is faithful to his duties—is rather serious, neither melancholy nor cheerful. There is not sufficient warmth in the manners—there is a want of sociability and warm-hearted character. He might be a slaveholder, but he would be lenient and kind—is probably a southern man but not attached to slavery. He acts very independently—sways considerable influence. He is not a philanthropist—is liberal in accordance with his ideas of right—cool calculating, just. He is rather secretive than communicative. He wishes high station, but would not make an ostentatious show—would go about like other men. He is clear in reasoning, reasons critically, analogically—his judgment is pretty quick. He is not much of a speaker, not eloquent, but shows good sense—matures well—is plain, matter of fact, and expects to be appreciated. He is rather democratic, independent—disregards aristocratic society. He has seen a great deal—has been disappointed by others not by self—looks upon the world seriously—feels that he has accomplished about all."

In reply to a question what would be his views of Neurology or Phrenology, it was intimated that he might be fair or rather favorably disposed, but not addicted to such subjects. As to his personal appearance he was described as rather tall, stout, old, active, and of iron constitution. The personal appearance is generally a matter of inference rather than of direct perception; hence there are few who can describe it with much accuracy, unless they have a large development of the organ of physical clairvoyance. The re-

mark as to the stature showed that the psychometer did not suspect the fact that this was the autograph of Gen. ZACHARY TAYLOR.

As this autograph (simply a superscription of a letter envelope) was written under no exciting circumstances it did not yield any peculiar excitement, but gave upon close observation a fair impression. Another autograph of Gen. Taylor—the signature to a letter written from Monterey, appeared to be more exciting. When placed upon the forehead of Dr. —, a gentleman of excitable and bold character, whose impressions of Van Buren and Cass have been given, it roused him almost immediately with an impression of war and fighting, which prevented any investigation of the character.

The impressions obtained from autographs of Gen. Taylor by Messrs. H. and K. may be best appreciated by presenting them together. The specimen tested by the former gentleman was the same signature to a letter from Monterey, which gave Dr. — the idea of fighting. The following are their impressions, classified, omitting the questions. Each of these gentlemen, in the first instance, spontaneously described the outlines of the character, and then, in answer to a few general questions, completed the description. The experiment of H. was made in January, 1849—that of K. in October, 1848.

1. *General impression of the letter.*

H. "Feels mean, somewhat like lying—don't like the character—anything but honest—like my opinion of Dr. —. Seems fit for anything that will promote his own interest, without regard to others. Has force of character, and talent to carry out his undertakings—cautious, politic, and ostentatious. He's in some snarl, and wants to get out of it. Might approach every man with a smile, wearing an assumed character, and associate with those he would avoid. This *don't convey the real character*. His present impression, however, is *from surrounding circumstances*. His character at the bottom is better than this indicates—might not, after all, be so bad—it seems as though there is some excuse for the present state and stamp. This must have been written under peculiar circumstances, probably in company that filled his mind with the contemplation of bad characters, dishonest, &c. I can't keep one train of thought."

K. "I feel neither grave nor merry—I feel considerable heat. Circumstances make the man—he must have something on his mind. I don't perceive any vices, but it runs in my head that he would steal. His dignity is moderate. He can have a dignified bearing by assuming more than naturally belongs to him, but he can't maintain it all the time." The idea of theft, as explained by K., referred not to common larceny, but to the reckless habit of taking or appropriating anything which might be needed, as occurs in war. The impressions of H. are probably such as might have arisen from his intercourse with a treacherous foe, and the desperadoes of the army.

2. Personal appearance and manners.

H. "A man in years—not very comely—rather rough. His temper indicates a southern man—has strong passions—more self-esteem than vanity—thinks himself better than he claims—has a pride in depreciating himself—not boastful—civil to all, and familiar."

K. "He is somewhat advanced in years—in the neighborhood of fifty. He has a remarkably good appetite of his own when he's well—it makes me feel hungry. He is rather ambitious—might be susceptible of flattery. [Dr. —— remarked that he might be pleased with it, but would detect the design.] His sincerity is like that of the world generally—he may have intimate friends to whom he unbosoms himself without reserve, but not to be generally known. If he ever practiced any deception, it would be to gain certain ends for the party to which he is attached. He is fond of fun, but seldom joins in it himself—wishes others to amuse him."

3. Moral character.

H. "He is a good and true patriot, but would at the same time promote his own interest and that of his friends. He is free from vindictiveness and revenge—does more for friends than against enemies. He is kind when it is not against his own interests, but has a great deal of selfishness at the bottom. He makes good bargains, is careful in business affairs, is legally honest—has not much religion—is temperate—is strongly attached to his family and home. If a slaveholder, he would treat his slaves pretty well, unless they roused his anger, yet even then would not be very severe."

K. "He is perfectly honest and honorable in his dealings—has acquisitiveness, and would be very shrewd in a bargain. In moral sentiments, not so high-toned as Gerrit Smith. His moral faculties are about medium—religious sentiments rather liberal. He could not be cruel—would be rather humane, unless when very much incensed he might do something he would regret—but the general tendency of his character is humane. He is liberal in his views, and *I should think* rather liberal with his money, too."

4. Talents and pursuits.

H. "He's a man in active life—has not much science. He would have the necessary force and address for a military man. He has more talent in the force of execution, than in planning—more courage than skill. He would fight as well as anybody, but could not plan well—would get into tight places, but fight through. His perceptive is better than his reflective intellect. He could see the present better than anticipate the future. He is a good judge of human nature—has a good opinion of his own judgment."

K. "He is a shrewd man, acute, observing—rather disposed to tell what things are at a glance, and forms a pretty correct opinion. He is fit for almost any station—not because he has a superior intellect to other persons, but because he has a faculty of turning himself with readiness to anything. He is better as a writer than as a speaker. He is rather ambitious, and would do better in some

public situation where he could satisfy his ambition—he is rather fond of popular approbation. He is rather determined as to anything he undertakes, but does not make much noise about it. If an obstacle lies in his way, he does not quarrel with it to show his firmness, but goes right on to accomplish his purpose. When he knows he is right, he shows great firmness and resistance to any opposition. He would do very well as a military man—better as an officer than as a private. He'd display himself better on such an occasion where he could be seen and judged—would make a very good general, though not naturally a fighting man—not fond of war. He would first learn his business well—study tactics—this, with his quick perceptive powers, would enable him to do well."

5. *Political character.*

H. "In politics he is moderate—if a Northern man, an anti-slavery whig or democrat—probably free soil—if Southern, would maintain Southern rights, but not insist on slavery in the territories. If a President, his administration would be conciliatory and disappoint extreme parties. He might pretend to let others have their own way, but he takes his own course. His capacities are moderate and might compare with Harrison or Tyler."

K. "He is active and would do well in office—there are those who would do better—he would not compare with Webster or Calhoun. He would be rather mild, and pursue a conservative course—disposed to take the views of others, but firm and independent."

In the foregoing impressions allowance should be made for the fact that no very favorable specimen of the autograph had been obtained for investigation. Benevolence and integrity nevertheless were distinctly recognized among the leading traits. The impressions given may be considered dispassionate and critical, rather than friendly and appreciative. To do fair psychometric justice, the writer should be taken in his most habitual and characteristic mood, and *tried by his peers*. If we cannot find any of similar character or talent, we should select the most sympathetic and appreciative psychometers who would enter into his extreme peculiarities. I regret that I have obtained no very appreciative estimate of Gen. Cass.

The following psychometric impression, by Dr. —, is probably a fair estimate as the characters appeared to be congenial:

"I feel some tendency to headache—there is general activity of the front lobe, striking down into the middle lobe—predominant action, frontal and temporal, with very fair coronal—mind clear, decided, and vigorous, especially in the intellectual way. Decision and energy are combined with intellect—they co-operate.

There ought to be considerable hope and confidence, with a fair share of philanthropy—a decidedly social disposition—a disposition for intercourse with men—pleasure in exercising intellect with and upon others. There is a disposition to talk pretty decidedly—I

presume a good writing talent, but chief pleasure in oral communication, conversing, explaining, elucidating—he is didactic—desires to instruct and convince, rather than please and persuade.

There is decided courage—fear does not enter into the composition. Whatever he enters upon, he enters boldly and confidently, and succeeds. It is something analogous to Alexander Campbell's energy, though not equal—not so great a desire to meet obstacles, but they would not daunt him. On the whole, he is predominantly intellectual, with a good proportion of planning power—decidedly social and philanthropic, with marked decision, courage, and a good degree of energy.

Q. What of his peculiar views or opinions?

He would be independent and original—not an imitator or mere learner—he forges out in his own mind, modifies what he receives and makes it original. He is liberal, enlarged in his sentiments, decidedly progressive—has nothing of the oyster—does not adhere to anything because it is old. He is willing to venture out to sea—confident he can reach land. I don't know what are his particular studies. If a politician, I think he'd be democratic—if a physician, the old school bonds would be worn lightly or thrown off—if a philosopher, he would be counted among the radicals.

Q. What are his views on morals and religion?

He should have correct moral sentiments—as to religious doctrines, he has a disposition to look beyond them—not satisfied with them. His views of morals rest chiefly on natural law. He is rather a happy man—not easily disturbed—has a good degree of equanimity. I would be very willing to trust myself with him—should have great confidence in him.

Q. Is he distinguished or obscure?

He is distinguished and living—my feelings are with the present and future—it seems he is in action.

Q. What station or position would you assign him?

My impression has been of a philosopher, engaged in social reforms—actively engaged.

Q. Is it a sincere, efficient interest, or speculative?

Sincere—more than intellectual—practical—stimulated by desire to benefit mankind, with great pleasure in the perfection of things. The perfectibility of man is a favorite idea with him.

Q. How is he in pecuniary matters?

Decided and liberal—decided as to his rights, and liberal to assist others—no littleness in pecuniary matters is possible with him.

Q. What are his views as to improving society?

The first thought was universal education (it may be my own thoughts) and social reform ramifying into all the moral relations—to place mankind in a suitable position, so that to do right would not be burdensome.

Q. Is he a believer in Neurology?

I think he would become an inquirer—he would not hastily receive or reject it.

Q. What as a public speaker?

He is clear, decided, impressive.

Q. What of his personal appearance?

It is not very clear—I think he would be erect, dignified, and rather above the medium stature.

Q. If such a man were a candidate for the Presidency, would you vote for him?

Yes.

Such was the opinion pronounced in an experiment upon the autograph of GERRIT SMITH by a very competent judge. I have a number of similar opinions by other individuals—all of whom are unanimous as to the leading traits of his character. The following opinion was pronounced by a lady of delicate impressibility—not inclined to sympathize with his radical views, but capable of appreciating him justly.

"This is very pleasant—entirely different from the other. He's not a politician, but a public man. He has a better feeling toward the human race generally—has their interest more at heart. He has more liberality than means. His intellect is very fine—he is a pleasant speaker. (Q. What depth of intellect?) He has a strong mind. (Q. How does it compare with Van Buren?) It is differently directed. (Q. What of his morals?) They are very good—not very pious as a professor. (What of his manners?) Affable, pleasant, from kind feelings—somewhat reserved among strangers. (Q. Would he make a good President?) He would if he had a good cabinet. (Q. How does he compare with Taylor?) He resembles him somewhat in honesty and benevolence. (Q. How as to money?) Both love it well enough to take care of it—Taylor's benevolence extends to individuals—this man to the human family; he would rather set up people to do for themselves. He has not so much energy as Taylor has. He has something of the spirit of a clergyman—his feelings are more refined than Taylor's. His character is a contrast to Cass—perhaps more sincere than Taylor—not so powerful a mind as Webster—perhaps talented as Cass. (Q. What is his domestic character?) Very kind and happy. (Q. Would he ever be ultra?) Yes, but not from any bad design. (Q. How would he regard the wrong?) Not very bitter, but he would speak pretty sharply. (Q. What would be his views of slavery?) He'd favor abolition. (Q. What of his religion?) He is not orthodox—he belongs to no sect—goes according to his own belief—is conscious of good life and actions—he don't believe as I do. [Presbyterian.] He has some trouble about his means—could not be as liberal as he wished."

This impression was from a letter, written in reply to a request for his assistance to a liberal enterprise, in which he declined doing much in consequence of other responsibilities.

The following impression of Gerrit Smith, given by an intelligent physician, although not perfect, exhibits a remarkable accuracy in some respects:

"He is grave and dignified—has considerable self-esteem, firmness and dignity of character, without regard to popular approbation. He is disposed to be very conscientious. Is more solid than showy as to reasoning powers. I should call him a very particular person in reference to every motive action or word. Everything has to be done with a degree of order. The domestic propensities are fair, but this is a person who would in a cause which he thought was right, be a martyr. He would sacrifice family, friends and all. He is rather aristocratic in feeling. (Q. How as to pecuniary matters?) Wealth is preferred only on account of the station it will give him in society. (Q. What is his character as to religion?) He is disposed to be religious—Veneration is large—he is disposed to view such things as sacred. (Q. What of his rank?) He ranks high. (Q. Is he a writer or speaker?) As a speaker, he would do very well—there is considerable argument in his speaking, more than in his writing—he is not so much in his element in the latter. In either he would show solidity. He has more humor in writing than in speaking. (Q. Has he any extravagance or fanaticism?) He would be ultra, thorough, firm—does not make much noise about it. (Q. What of his liberality?) He is liberal, but it is different from what is commonly called liberality. He would put individuals in a position to do for themselves. He knows that he is not called a very liberal man. (Q. What are his views of science and philosophy?) He looks upon them as secondary. (Q. What of Neurology?) If satisfied of its truth, he would not take hold immediately. (Q. Is he fit for political office?) He would do very well. He would make a good postmaster-general—better to be over others. (Q. What would you say of him as President?) He would make a very good President. He would be subject to many internal mortifications from having his ideas and doings criticised improperly. He would make a good trusty officer—what he had not in himself he would get from others. When he thinks he is right, anything opposed makes him feel nettled. (Q. What are his views on slavery?) He would not think slavery right. (Q. How does he compare with Cass?) He is rather opposite. (Q. Which has the best talents?) This has better—more solidity, causality, depth. (Q. How much selfishness?) Nothing like common selfishness, though his independence and self-reliance might wear that appearance. He would endeavor to get persons to do for themselves."

An old gentleman, an enthusiastic radical, whom I suspected from his benevolence and mental activity of being somewhat impulsive, submitted to the experimental trial. Among the first specimens one of Gerrit Smith was tried, which gave him great pleasure and elicited a very good description. His first words were

—“he has been casting about for funds for some social purpose—he is a real good hearted man—rather enthusiastic too. He regrets very much the state of society as it is. Thinks and says, they ought to be, and must be ultimately better.” The description was quite minute, even to specifying that he was a man of wealth and describing his personal appearance.

In reference to all of the foregoing experiments it must be borne in mind that they are not designed to develope or to throw any new light upon the characters of our presidential candidates—(characters which are well known and have been conspicuously demonstrated), but merely to illustrate the application of a new science, and the existence of a power in the human constitution, the knowledge of which will enable us to undertake a course of scientific investigations heretofore utterly impossible, and to reach the *arcana* of Physiology, Pathology and *Materia Medica*, as well as Psychology.

The experiments above reported have in all cases been tried in the usual cautious manner—the psychometer knowing nothing of the source of the autograph—knowing merely that he had a piece of manuscript upon his forehead, from which he was desired to receive and express his impressions, and all questions being avoided which might bias his mind, while he was requested to preserve a cautious impartiality, and to avoid the delusions of imagination or any attempt to conjecture the name of the writer which might prejudice and mislead his mind.

The limited space of this Journal and the general celebrity of three of the presidential candidates render it unnecessary to give any biographical sketch of the parties. But in reference to Mr. Smith, the nominee of the Liberty party, so little was known by many of the people, that it may be desirable to present a few facts in reference to his character. The object to which Mr. Smith has been devoted, in pursuit of which he has manifested great earnestness, boldness and sincerity, has been the regeneration of society and government, by the application of the highest principles of religion and justice. This he advocates in a bold, terse and decided manner. Land reform, universal freedom and equality and the opposition to all unjust governments are his leading measures. As a prominent member of the Liberty party he endeavored to change and enlarge its operations from a mere opposition to slavery and to a general opposition to all injustice. The following extracts from his speech at Syracuse illustrate his doctrines.

“God is impartial and just. Hence, the irresistible inference, that land, light, air, and water are the common inheritance of all the sons and daughters of Adam. No person is born into the world a trespasser. Every person born into it is the rightful, absolute owner of his needed share in these elements of human subsistence. The mere fact of his birth is conclusive proof of such ownership. These elements are not the subjects of property—are not property—unless (to quote from the famous Black Hawk’s happy definition

of property) to the extent, that they 'can be carried away.' I have no right to sell my needed share in these elements—no more than I have to sell my person, which cannot exist without this needed share. And my claim to another's share in them, or, in short, to anything in them, beyond the simple wants of my own person, is the claim of an usurper—not of an owner."

"Within the last two or three years, war has come upon us. This, of all oppressions of the poor, is the greatest—for the poor must both fight its battles, and pay its debts. The homeless, outcast, desperate poor must do the one; the toiling, delving, sweat-drenched poor—the sole creators of wealth—must do the other. Hence, the Liberty party cannot be true to its great principle of 'the equal rights of all men,' without being a practical anti-war party.

"But, to be a practical anti-war party is to be also a practical anti-tariff party. Tariffs are the great reliance for means to carry on wars. Were the expenses of government to be paid as they accrue, and by direct taxation, there would rarely be a war—especially, a war of conquest. And, here, let me add, that no government will ever be found frugal and honest, until its expenses are thus paid;—until its subjects are, thereby, brought under the efficient motive to keep it honest and frugal. There are other reasons why tariffs should be frowned upon. They build up barriers across the human brotherhood; and 'make enemies of nations, which, else, like kindred drops, had mingled into one.' But, the one reason, that they impose their burdens so unequally, making the poor pay a hundred-fold more, according to their ability, than the rich, is sufficient to demand the sternest opposition to them from a party which is based on the doctrine of 'the equal rights of all men.'

"It is, too, in answer to a loud Providential call, that the Liberty party is arraying itself against secret societies;—for how rapid has been their recent multiplication! And that secret societies are to be looked upon as violators of 'the equal rights of man,' none can doubt, who, twenty years ago, saw one of them sway courts and legislatures and prove itself an overmatch for the laws.

"And the Liberty party, in arraying itself against the rum-selling monopoly, which, of late years, has also shown itself able to control courts and legislatures—and, that too, even against the clearly expressed popular will—is but answering another loud call in Providence to oppose one of the most unrighteous and ruinous violations of 'the equal rights of all men.'

"One thing more, ere I close. We all love to perform the offices of every-day charity. We all love to feed the hungry, and clothe the naked; and none of us can turn the destitute beggar empty away. Nevertheless such charity, notwithstanding we cannot refrain from indulging in it, is not free from the most pernicious effects. It cures not, and it often aggravates the disease to which it ministers. Its temporary relief is but too generally followed by

permanent injury. How much better to provide the poor with homes ;—or, to speak more correctly, to let them provide themselves with homes upon their own God-given shares of this goodly green earth, than, by robbing them of these shares, to keep them mendicants, and to hold them in dependence upon our charity!"

In his letter to the treasurer of the American Missionary Association, he says :

"Our world is in rebellion against its Maker. It is, of course, as unhappy, as it is unrighteous. But, there is a remedy for this sin and ruin. That remedy is Christianity ;—and the friends of God and man are bent upon applying it. How shall it be applied most successfully ? By being applied *wholly*, instead of *partially*. It is true, that a measure of good may result from its partial application. But, it is only by its thorough application, that the world can be brought back to God and to happiness.

"There is nothing which the Christianity of the Bible more pointedly and fully condemns than oppression : and by nothing, so much as by oppression, is her progress obstructed. Hence, they who even tolerate oppression—and, much more, they who uphold and practice it—are, if, indeed, they can be said to be applying Christianity at all to the sins and sufferings of the world, applying it very imperfectly."

"There are the oppressed Irish, and the Southern slaves also. But little could Christianity do for them, except through the convictions it might produce in their oppressors. A Christianity for the oppressed, which is at peace with the oppressor, is worse than no Christianity. Not such a Christianity was that, which the lamented Raymond carried to Africa.

"I do not say, that all forms of oppression constitute an equal barrier to the progress of Christianity. The oppressed, who are reduced to chattelhoods, and those, who left to themselves, are, nevertheless, denied the rights of property, are, if it must be admitted, less likely to be brought under the saving instructions of Christianity, than those who are simply poor. And, yet, where the masses are poor, it is hardly too much to take up the words of the poet : 'Poverty's unconquerable bar,' and repeat them in the face of the power even of Christianity herself. The rich cannot be the disciples of Christianity. No man, who regards himself as rich—as the *owner* of the riches which have come into his stewardship—is in the way to Heaven. And, though I cannot say that none of the poor are 'rich in faith and heirs of the kingdom,' yet I can say, that if Christianity be not in her element, when among the rich, neither is she, when among the poor. Her Author has adapted her to achieve her triumphs among those, whose condition was prayed for by Agur—whose lot in life lies between the extremes of poverty and riches. That Christianity is unadapted both to a state of riches and a state of poverty is manifest from the fact, that her principles, not to say her precepts, forbid both riches and pov-

erty. The universality of Christian love would, of itself, suffice to prevent either. And, what is more, the nation, in which this truth is unacknowledged and unfelt by her disciples, cannot, while such remains the fact, be christianized. I admit, that, even in such a nation, Christianity may, here and there, and temporarily, accomplish something. But the masses, if at all affected by her power, will be only slightly and temporarily so.

"It follows, then, that the true and intelligent disciple of Christ will labor to remove and prevent poverty—all poverty—as well that which has not, as that which has, the worst features of oppression in it."

In accordance with these principles has been his practice. Mr. Smith was by inheritance an immense landholder, and he has therefore been enabled to make noble and generous donations. He is now distributing in free donations, a large number of townships of land to poor landless men, in the State of New York, with the design of thus placing them in an independent position in their own homes.

The *physiognomical* indications of Gen. Taylor and Mr. Smith will be a subject of future remark.

■■■■■ An Essay upon the GALLIAN SYSTEM of Phrenology, in comparison with the NEUROLOGICAL SYSTEM, showing the nature and extent of the changes produced by the new discoveries, is already in type, but has been postponed to the next number.

BARON REICHENBACH's admirable demonstrations of Animal Magnetism by a new discovery will also appear in the next Number.

MR. RALPH WALDO EMERSON has just finished delivering two courses of lectures in Cincinnati. Mr. E. has talent of a high order, and is perhaps the most remarkable specimen, now living, of highly cultivated and intense Ideality and Self-complacency. But unfortunately his genius seems directed to no noble end—there is no moral warmth—his mental atmosphere is that of an icicle. To those, who are lacking in Self-respect and serene Ideality, but whose moral faculties are *too active* and warm (if there are any such), a cold bath of Emersonianism might be beneficial and refreshing. Unfortunately Mr. Emerson but strengthens a cold Idealism, which has always been prevalent among the cultivated and wealthy, who neither feel the burdens of life, nor care for those who do.

DAVID RUGGLES.—This remarkable individual, whose power of sympathetic diagnosis of disease was described in the first No. of this Journal, died last winter at his water-cure establishment. Dr. Munde, a distinguished German Hydropathic physician, has taken the place.

WOMEN'S CONVENTION.—A convention of the ladies was held on the 19th of April at Salem, Ohio. The proceedings were dignified and able. They demand equality of the sexes in the right of suffrage, and all other rights. After their adjournment, on the 20th, the men came in and held a meeting, expressing their cordial approbation, their admiration of the meeting, and their determination to co-operate with the women in demanding their rights. Want of space prevents a fuller notice.

■■■■■ MEDICAL.—The spring session of the ECLECTIC MEDICAL INSTITUTE closed on Friday, March 31st. The catalogue of the entire term (winter and spring) will exhibit an aggregate of **MORE** than two hundred and twenty students and sixty graduates. Prof. Hill's surgical work is in rapid progress, and will be out in a few days.

The National Eclectic Medical Association assembled in Cincinnati on the 21st of May, and held an interesting session during three days. The following are the officers for the year—**PRESIDENT**, Dr. J. R. Buchanan, of Cincinnati; **VICE PRESIDENTS**—Dr. T. J. Wright, of Ohio; Dr. H. T. N. Benedict, of Indiana; **SECRETARIES**, Dr. J. G. Hunt and Dr. O. S. Newton. The next meeting of the Association is to be held in Pittsburg, on the 2d Tuesday of June, 1851.